

| PROTEIN | DESCRIPTION | REFERENCE ¹ | mRNA/gene Sequence ² |
|------------------------------|--|------------------------|------------------------------------|
| VOLTAGE-GATED ION CHANNEL | K+ CHANNEL BETA 1A SUBUNIT | Hs.45090 | U33428 L39833 L47665 |
| SODIUM CHANNEL | VOLTAGE DEPENDANT SODIUM CHANNEL | | |
| CALCIUM CHANNEL | DIHYDROPYRIDINE-SENSITIVE L-TYPE, CALCIUM CHANNEL BETA-1-B1 SUBUNIT | Hs.635 | L0611 M92392 M76560 |
| | DIHYDROPYRIDINE-SENSITIVE L-TYPE CALCIUM CHANNEL ALPHA-1 SUBUNIT (CACNLIA3), | Hs.1294 | L33798 U30707 |
| | NEURONAL DHP-SENSITIVE, VOLTAGE-DEPENDENT, CALCIUM CHANNEL ALPHA-2b SUBUNIT | Hs.1295 | M76559 |
| | DIHYDROPYRIDINE-SENSITIVE 1-TYPE, SKELETAL MUSCLE CALCIUM CHANNEL GAMMA SUBUNIT | Hs.1296 | L07738 Z19603 |
| | NEURONAL DHP-SENSITIVE, VOLTAGE-DEPENDENT, CALCIUM CHANNEL ALPHA-1D SUBUNIT | Hs.23838 | M76558 M83556 D43747 |
| | PUTATIVE CALCIUM INFLUX CHANNEL (htrp3) | H.24852 | U47050 Y13758 |
| | VOLTAGE-DEPENDENT CALCIUM CHANNEL ALPHA-1 E-3 | Hs.65441 | L29385 L29384 L27745 |
| | N-TYPE CALCIUM CHANNEL ALPHA- SUBUNIT | Hs.69949 | M94172 M94173 |
| | VOLTAGE-DEPENDENT L-TYPE Ca CHANNEL ALPHA 1 SUBUNIT | Hs.89925 | L29536 L29534 M92269 |

¹ GENBANK REFERENCE DESIGNATION FOR PROTEIN. PROTEINS WITH NO DESIGNATION ARE REFERENCED IN THIS TEXT.

² GENBANK mRNA OR GENE SEQUENCE REFERENCE DESIGNATION.

FIG. 1-A

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| PROTEIN | DESCRIPTION | REFERENCE | mRNA/gene Sequence |
|------------------------|---|-----------|----------------------------|
| LIGAND-GATED CHANNEL | GAMMA-AMINO BUTYRIC ACID (GABA) RECEPTOR | | |
| | NICOTINIC ACETYLCHOLINE RECEPTOR | | |
| G-COUPLED RECEPTOR | P2Y6 RECEPTOR | Hs.16362 | AF007891 U52464 |
| | CHEMOKINE (C-C) RECEPTOR 7 | Hs.784 | L08177 |
| | HUMAN RPE-RETINAL G PROTEIN-COUPLED RECEPTOR | Hs.1544 | U14910 |
| | INWARDLY RECTIFYING POTASSIUM CHANNEL KIR3.2 | Hs.11173 | U52153 D87327 U24660 |
| | G PROTEIN-COUPLED RECEPTOR KINASE GRK4 | Hs.32859 | L03718 U33054 |
| | G PROTEIN-COUPLED INWARDLY RECTIFYING POTASSIUM CHANNEL Kir3.4 | Hs.37168 | U52154 |
| | G PROTEIN-ACTIVATED INWARDLY RECTIFYING POTASSIUM CHANNEL HGIRK1/Kir3.1 | Hs.37169 | U50964 |
| RECEPTOR-GATED CHANNEL | Fc FRAGMENT OF IgE, HIGH AFFINITY 1, RECEPTOR FOR: BETA POLYPEPTIDE | Hs.30 | M89796 |
| | INTERLEUKIN 2 RECEPTOR GAMMA CHAIN | Hs.84 | L19546 |
| | CHOLECYSTOKININ A RECEPTOR | Hs.129 | L13605 L19315 |
| | PERIPHERAL-TYPE BENZODIAZEPINE RECEPTOR | Hs.202 | M36035 |
| | CHOLECYSTOKININ B RECEPTOR | Hs.203 | L07746 L10822 |
| | GLUCAGON RECEPTOR | Hs.208 | L20316 |
| | SERINE/THREONINE-PROTEIN KINASE RECEPTOR R4 PRECURSOR | Hs.220 | L11695 |
| | FORMYL PEPTIDE RECEPTOR-LIKE 1 | Hs.251 | M84562 M88107 |
| | ADENOSINE RECEPTOR A3 | Hs.258 | L20463 L22607 |

FIG. 1-B

| PROTEIN | DESCRIPTION | REFERENCE | mRNA/gene Sequence |
|------------------------|---|-----------|--------------------|
| GROWTH FACTOR RECEPTOR | PLEIOTROPHIN (HEPARIN BINDING GROWTH FACTOR 8, NEURITE GROWTH-PROMOTING FACTOR 1) | Hs.44 | M57399 |
| | HEPATOCYTE GROWTH FACTOR ACTIVATOR RECURSOR | Hs.104 | D14012 |
| | FIBROBLAST GROWTH FACTOR 9 (GLIA-ACTIVATING FACTOR) | Hs.111 | D14838 |
| | INSULIN-LIKE GROWTH FACTOR BINDING PROTEIN 2 | Hs.162 | M35410 |
| KINASE | HUMAN GROWTH FACTOR RECEPTOR TYROSINE KINASE (STK-1) | Hs. 385 | U02687 |
| | PROTO-ONCOGENE C-COT (PROTEIN-SERINE/THREONINE KINASE) | Hs.248 | D14497 |
| | RECEPTOR PROTEIN-TYROSINE KINASE SKY | Hs.301 | U18934 D17517 |
| | CALCIUM/CALMODULIN-DEPENDENT PROTEIN KINASE IV | Hs.348 | D30742 L24959 |
| | CREATINE KINASE B | Hs.669 | M16451 L47647 |
| TRANSFERASE | V-raf MURINE SARCOMA VIRAL ONCOGENE HOMOLOG B1 | Hs.662 | M95712 |
| | GLUCOSAMINYL (N-acetyl) TRANSFERASE 1, CORE 2 | Hs.781 | M97347 L41415 |
| | GLUTATHIONE S-TRANSFERASE, MICROSOMAL | Hs.790 | J03746 |
| | UDP GLUCOSYLTRANSFERASE 8 (UDP-GALACTOSE CERAMIDE GALACTOSYLTRANSFERASE) | Hs.57700 | U30930 U62899 |
| ISOMERASE | PEPTIDYLPROLYL ISOMERASE B (CYCLOPHILIN B) | Hs.699 | |
| | 3-BETA HYDROXY-5-ENE STEROID DEHYDROGENASE TYPE II | Hs.825 | M67466 N77144 |
| | GLUCOSE PHOSPHATE ISOMERASE | Hs.944 | K03515 |
| | HYDROXY-DELTA-5-STEROID DEHYDROGENASE, 3-BETA- AND STEROID DELTA-ISOMERASE 1 | Hs.38586 | M27137 M38180 |
| PROTEASE | 26S PROTEASE REGULATORY SUBUNIT 4 | Hs.548 | L02426 |
| | HEPSIN | Hs.823 | M18930 |
| | GRANZYME B PRECURSOR | Hs.1051 | M17016 |
| DEHYDROGENASE | GLYCINE CLEAVAGE SYSTEM PROTEIN P (GLYCINE DECARBOXYLASE) | Hs.27 | M64590 |
| | 17 BETA HYDROXYSTEROID DEHYDROGENASE, TYPE 2 | Hs.181 | L11708 |

FIG. 1-C

| PROTEIN | DESCRIPTION | REFERENCE | mRNA/gene Sequence |
|---------------|--|-----------|--------------------|
| DEHYDROGENASE | XANTHINE DEHYDROGENASE | Hs.250 | D11456 |
| | ALCOHOL DEHYDROGENASE 7 SIGMA SUBUNIT (CLASS IV) | Hs.389 | U09623 U07821 |
| | SUCCINATE DEHYDROGENASE 2, FLAVOPROTEIN (Fp) SUBUNIT | Hs.469 | D30648 L21936 |
| SYTHETASE | LONG CHAIN FATTY ACID ACYL-coA LIGASE | Hs.34 | L09229 |
| | FOLYLPOLYGLUTAMATE SYNTHETASE | Hs.754 | M98045 |
| | GLUTAMATE-CYSTEINE LIGASE (GAMMA-GLUTAMYL-CYSTEINE SYNTHETASE), CATALYTIC | Hs.1673 | M90656 |
| DEAMINASE | HYDROXYMETHYLBILANE SYNTHASE | Hs.82609 | M95623 |
| | DIPEPTIDYLPEPTIDASE IV (CD26, ADENOSINE DEAMINASE COMPLEXING PROTEIN 2) | Hs.44926 | M80536 |
| | DEOXYCYTIDYLATE DEAMINASE | Hs.76894 | L12136 |
| ONCOGENE | AMP DEAMINASE 2 | Hs.82927 | U16270 |
| | ADENOSINE MONOPHOSPHATE DEAMINASE (ISOFORM E) | Hs.83918 | M84721 |
| | V-erb AVIAN SARCOMA VIRUS CT10 ONCOGENE HOMOLOG | Hs.16 | D10656 |
| | THYROID HORMONE RECEPTOR, ALPHA (AVIAN ERYTHROBLASTIC LEUKEMIA VIRAL (v-erb-a) ONCOGENE HOMOLOG) | Hs.724 | M24899 |
| | FRIEND LEUKEMIA VIRUS INTEGRATION I | Hs.736 | M98833 |
| | RAP1A, MEMBER OF RAS ONCOGENE FAMILY | Hs.865 | M22995 |
| | THROMBOPOIETIN (MYELOPROLIFERATIVE LEUKEMIA VIRUS ONCOGENE LIGAND, MEGAKARYOCYTE GROWTH AND DEVELOPMENT FACTOR | Hs.1166 | L36051 |
| | FIBROBLAST GROWTH FACTOR 4 (HEPARIN SECRETORY TRANSFORMING PROTEIN 1, KAPOSI SARCOMA ONCOGENE) | Hs.1755 | J02986 M17446 |
| | V-erb-a AVIAN ERYTHROBLASTIC LEUKEMIA VIRAL ONCOGENE HOMOLOG-LIKE 4 | Hs.1939 | L07868 |
| FOS | P55-c-fos PROTO-ONCOGENE PROTEIN | Hs.25647 | V01512 |
| JUN | C-jun PROTO ONCOGENE (JUN) | Hs.78465 | J04111 |
| | Jun B PROTO-ONCOGENE | Hs.89792 | M29039 |

FIG. 1-D



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CANINE LV MYOCYTES INFECTED
WITH dGFP or AdHERG

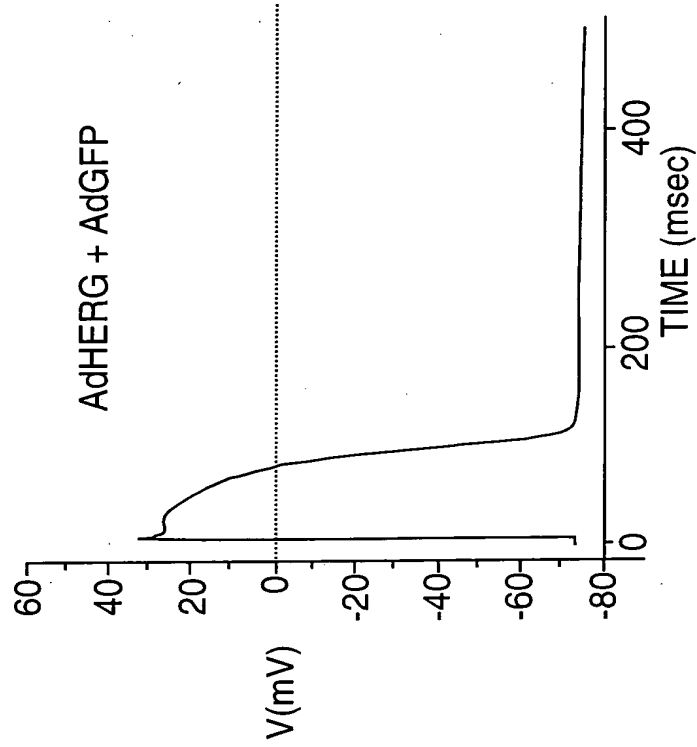


FIG. 2B

CANINE LV MYOCYTES INFECTED
WITH dGFP or AdHERG

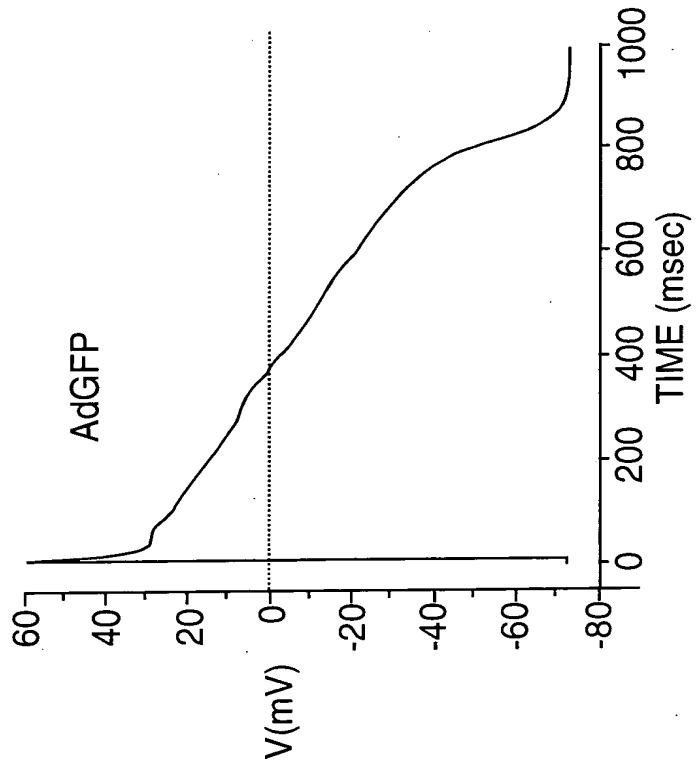


FIG. 2A

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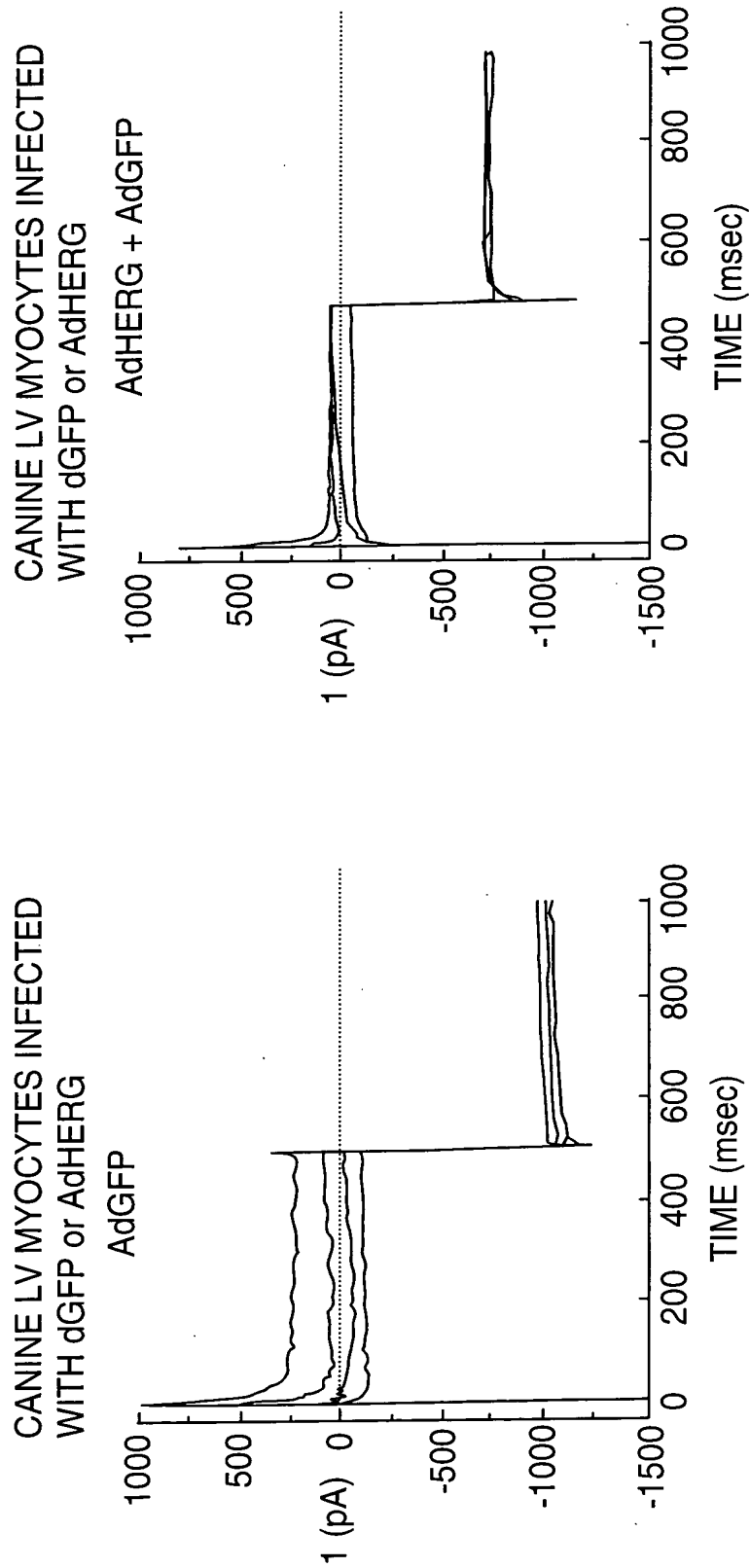


FIG. 2D

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CANINE LV MYOCYTES INFECTED
WITH dGFP or AdHERG

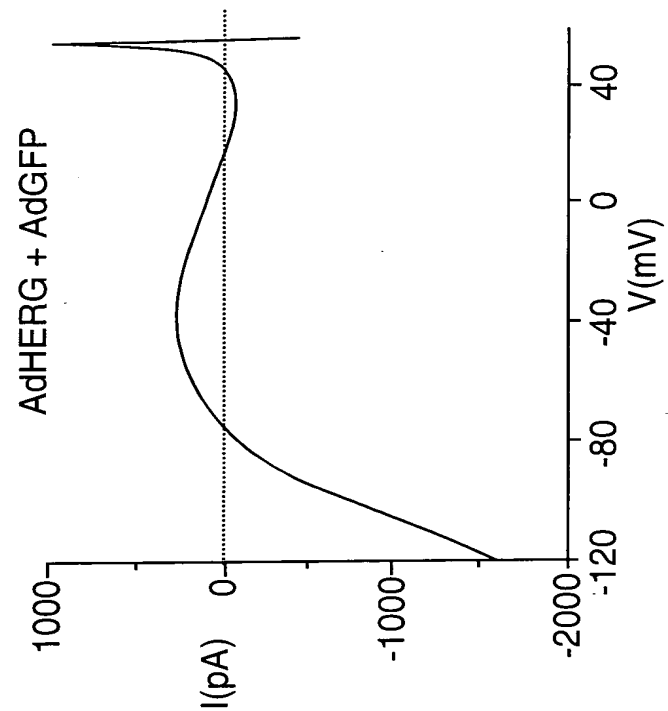


FIG. 2F

CANINE LV MYOCYTES INFECTED
WITH dGFP or AdHERG

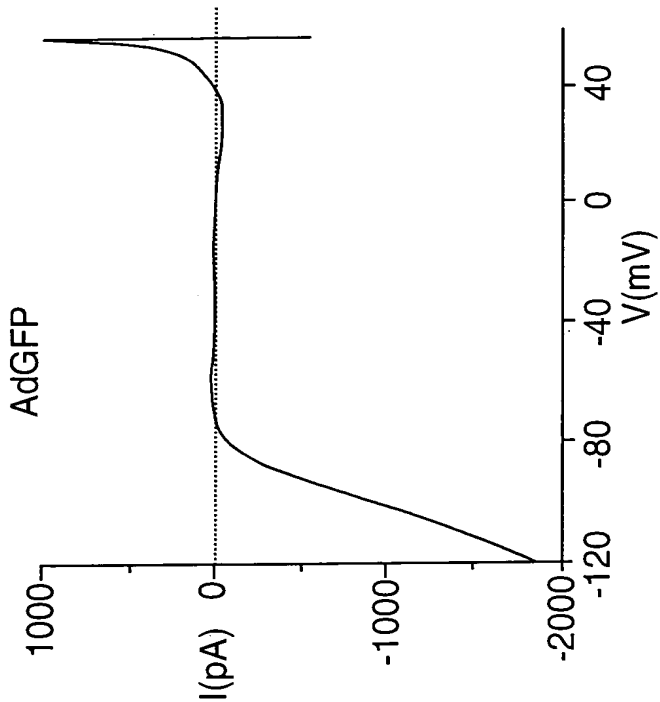


FIG. 2E



SCHEMATIC

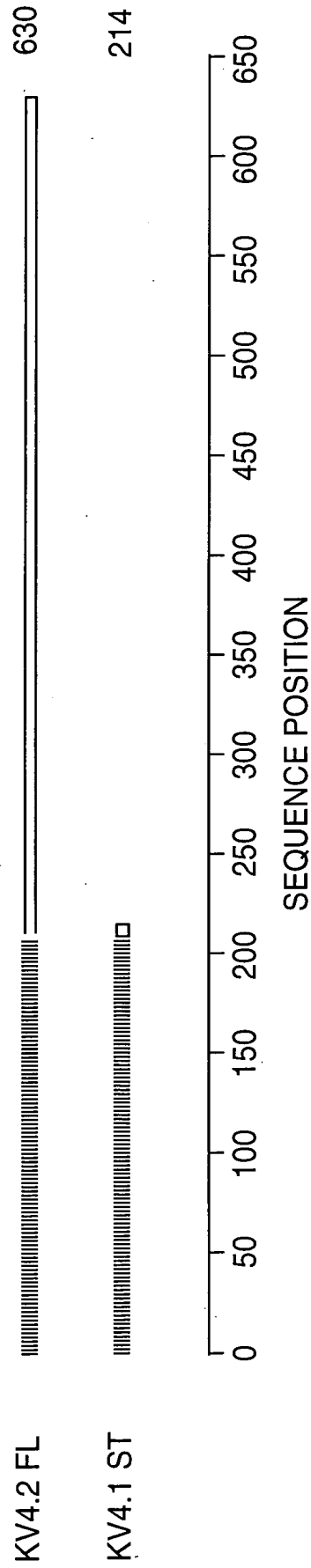


FIG. 3A

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ALIGNMENT

| | | |
|----------|---|-----|
| KV4.2 FL | MAAGVAAWLPEARAAAIGWMPVASGMPAPPQERKRTQDALIVLNVSGTRFQTWQDTLE | 60 |
| KV4.2 ST | MAAGVAAWLPEARAAAIGWMPVASGMPAPPQERKRTQDALIVLNVSGTRFQTWQDTLE | 60 |
| KV4.2 FL | RYPDTLLGSSERDFFYHPETQQYFFDRDPDIFRHIILNFYRTGKLHYPRHECISAYDEELA | 120 |
| KV4.2 ST | RYPDTLLGSSERDFFYHPETQQYFFDRDPDIFRHIILNFYRTGKLHYPRHECISAYDEELA | 120 |
| KV4.2 FL | FEGLIPEIIGDCCYEEYKDRRRENAERLQDDADTDNTGESALPTMTARQVRWRAFENPHT | 180 |
| KV4.2 ST | FEGLIPEIIGDCCYEEYKDRRRENAERLQDDADTDNTGESALPTMTARQVRWRAFENPHT | 180 |
| KV4.2 FL | STMALVFYVVTGFFIAVSVIANVVEtVpcgsspgihikelpcgeryavaffcldtacvmif | 240 |
| KV4.2 ST | STMALVFYVVTGFFIAVSVIANVVEtVpcgsspgihikelpcgeryavaffcldtacvmif | 214 |
| KV4.2 FL | tveyllrlaapsryrfvrsvmsiidvailpyyiglvmtdnedvsgafvtrvfrvfrfri | 300 |
| KV4.2 ST | ----- | 214 |
| KV4.2 FL | fkfsrhsgglrilgytlkscaselgllflsltmaliiifatvmfyaekgssaskftsipaa | 360 |
| KV4.2 ST | ----- | 214 |
| KV4.2 FL | fwytiivtmrtlgygdmvpktiagkifgsicslsgvlvialpvpvsvnsfryhqnqgrad | 420 |
| KV4.2 ST | ----- | 214 |
| KV4.2 FL | krraqkkarlariraaksgsanaymqskrngllsnqlqssedepafvsksgssfetqhhh | 480 |
| KV4.2 ST | ----- | 214 |
| KV4.2 FL | llhclekttnhefvdeqvfeescmevatvnrpsshpslssqqgvtstccsrrhkktfri | 540 |
| KV4.2 ST | ----- | 214 |

FIG. 3B



KV4.2 FL
KV4.2 ST

pnansgshrgsvqelstiqircvertplnsrsslakmeecvklncegpyvttaiisi

600
214

KV4.2 FL
KV4.2 ST

ptppvttpegddrpespeysggnivrval

630
214

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FIG. 3C

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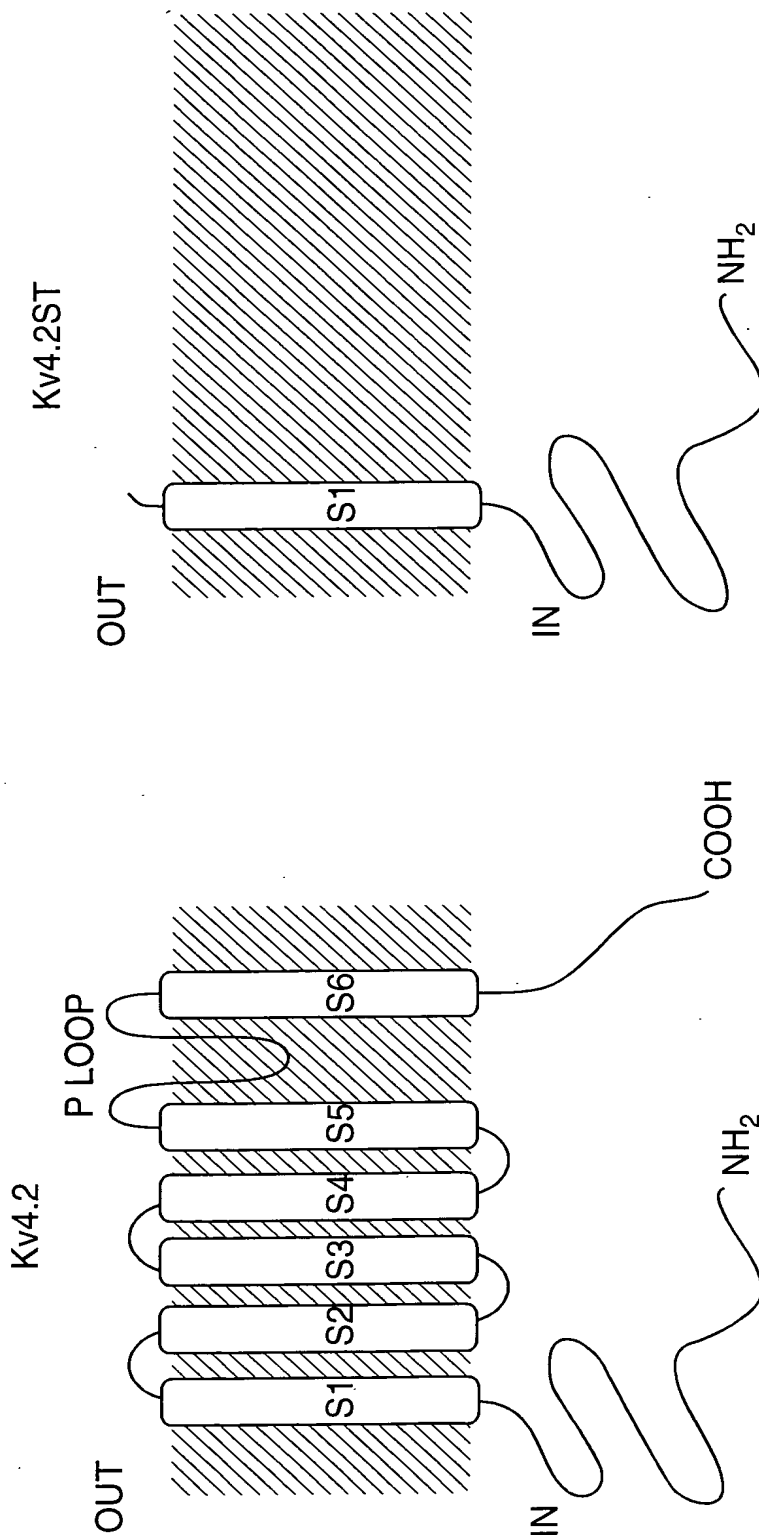


FIG. 4A

FIG. 4B

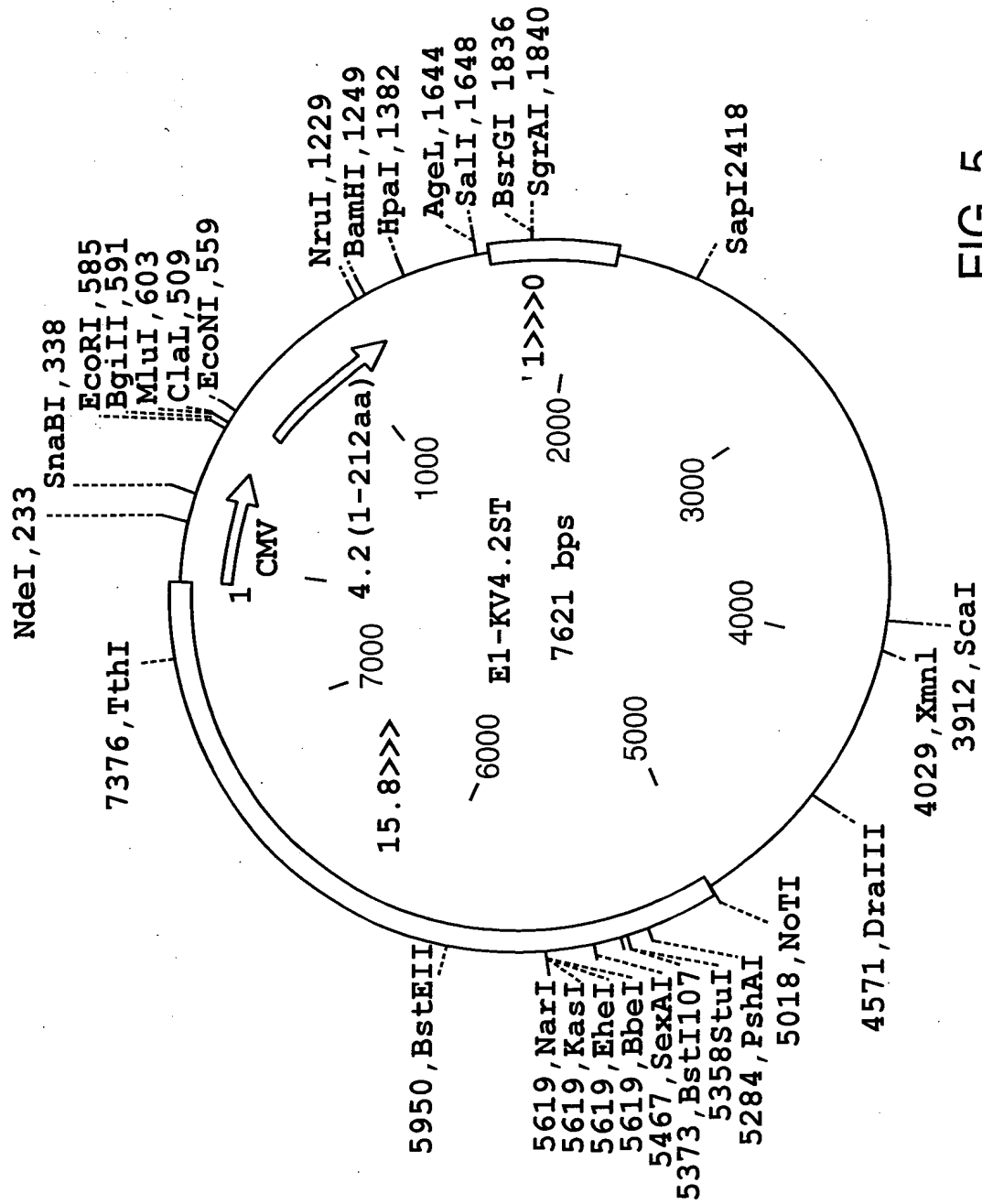


FIG. 5

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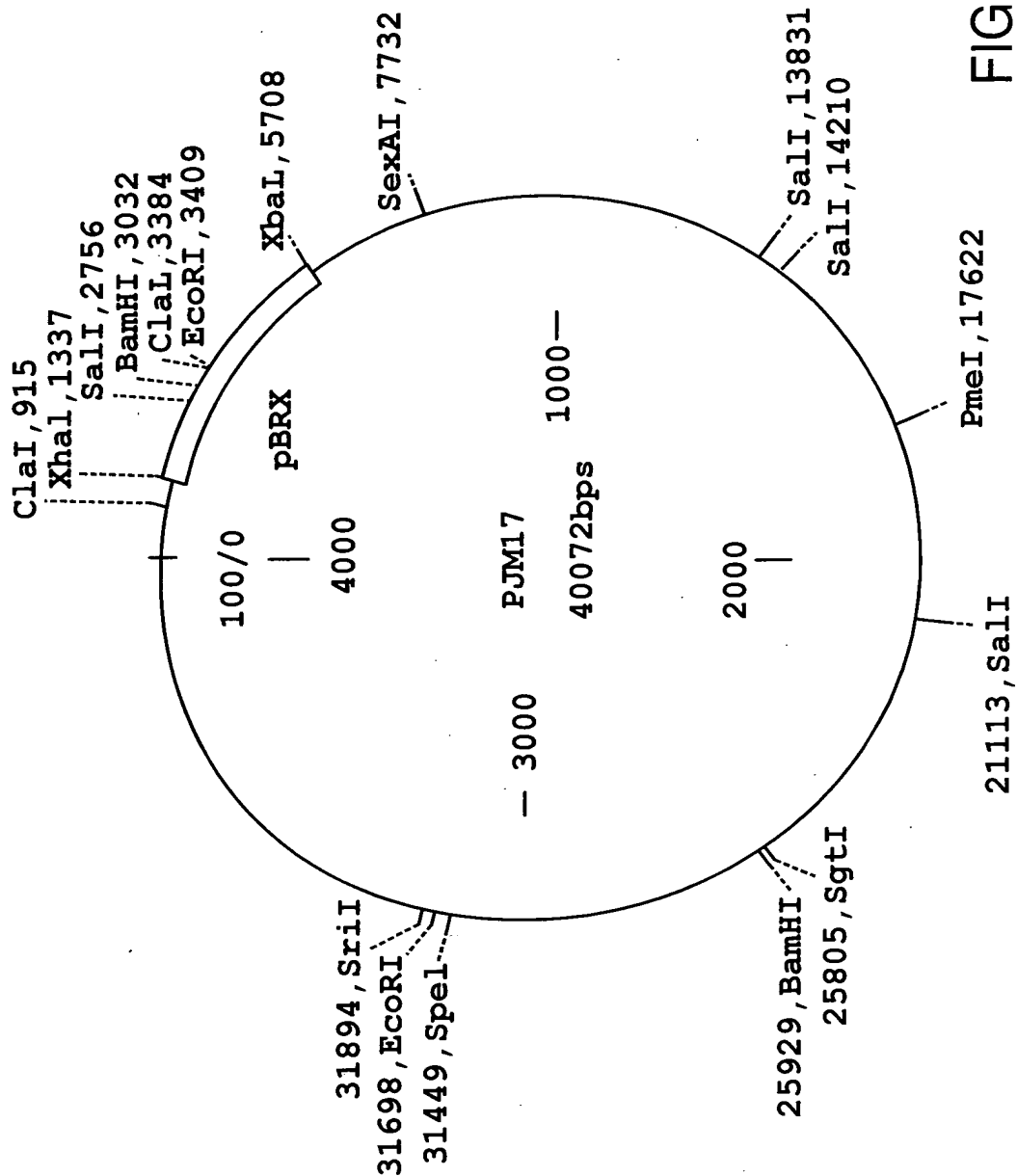
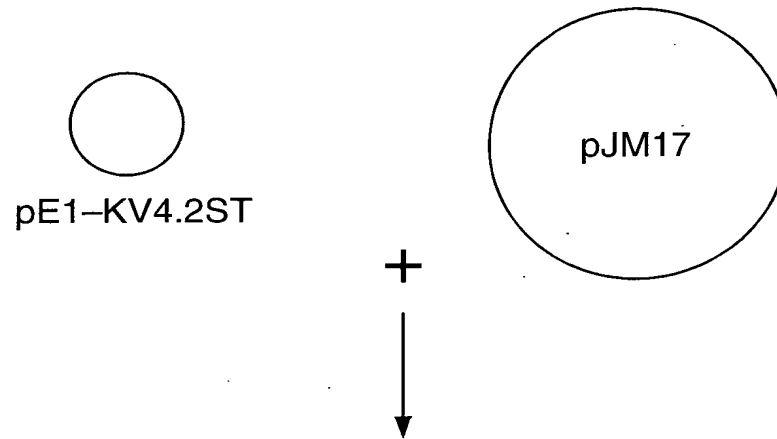


FIG. 6

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AdKv4.2ST

FIG. 7A

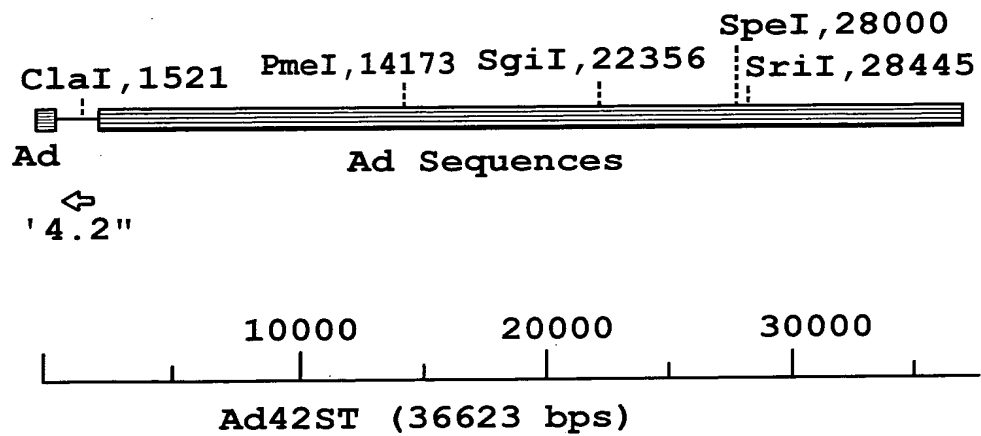


Fig.7B

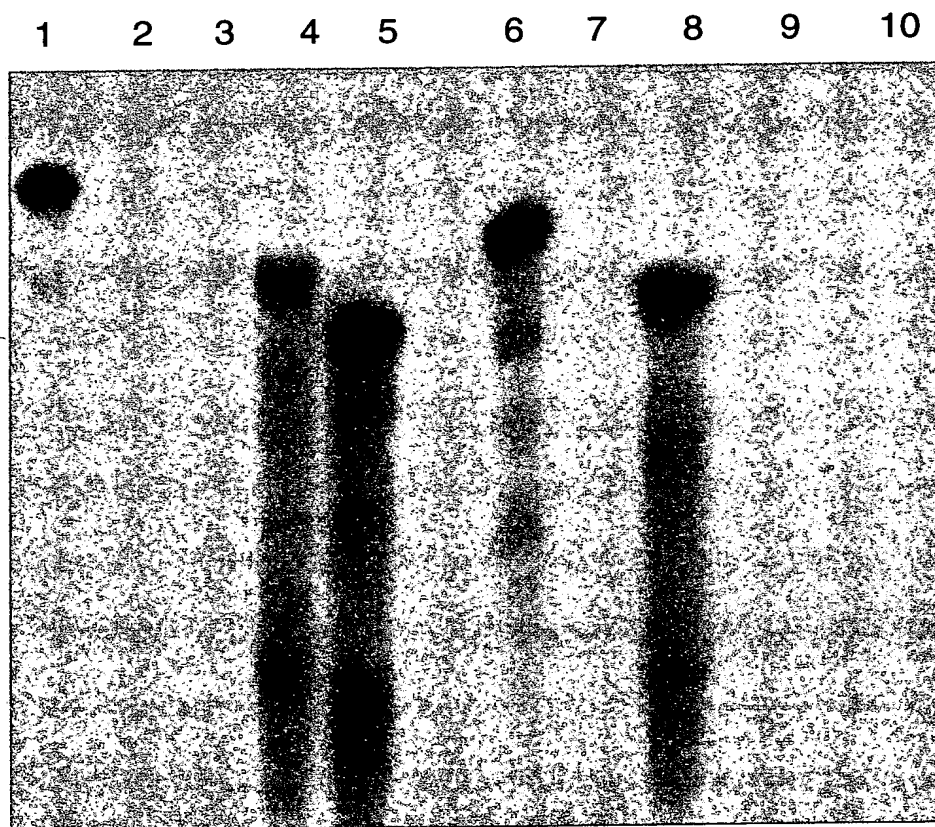


FIG. 8

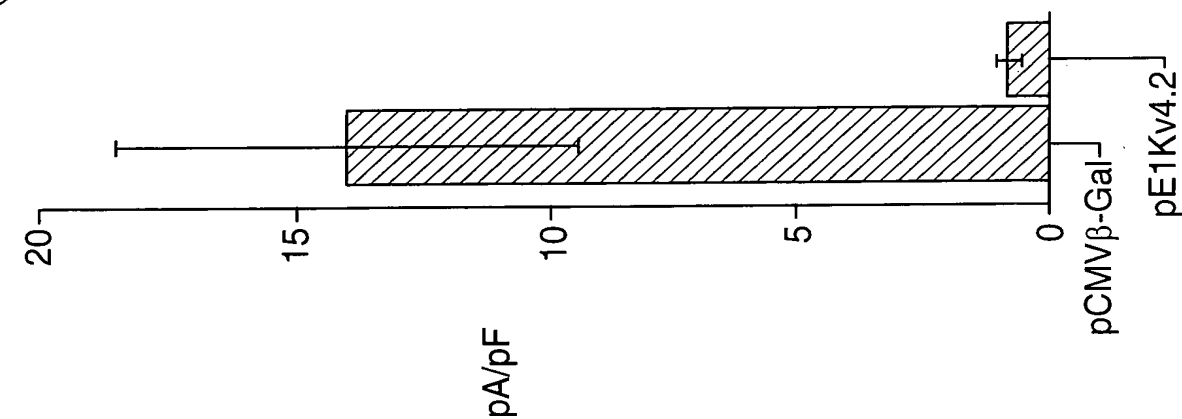


FIG. 9C

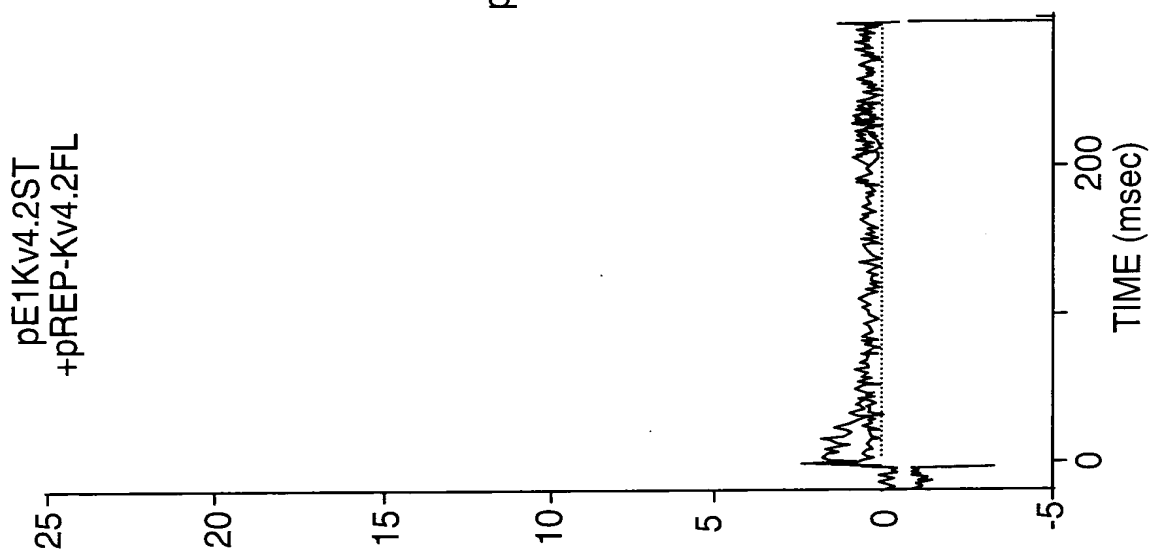


FIG. 9B

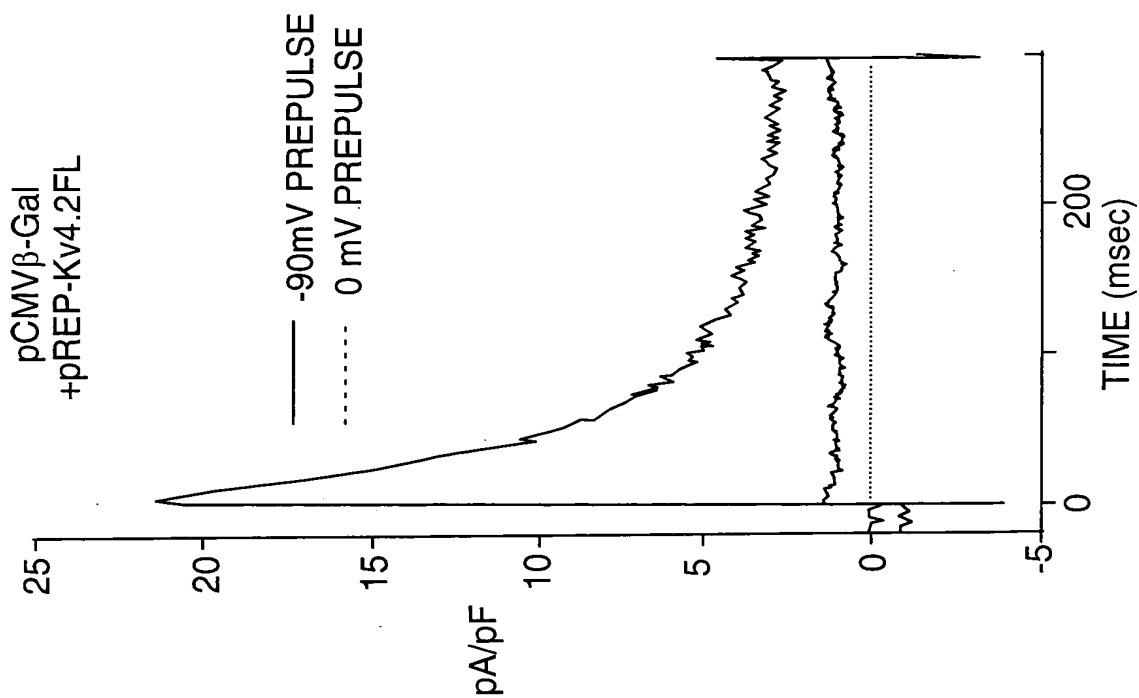


FIG. 9A

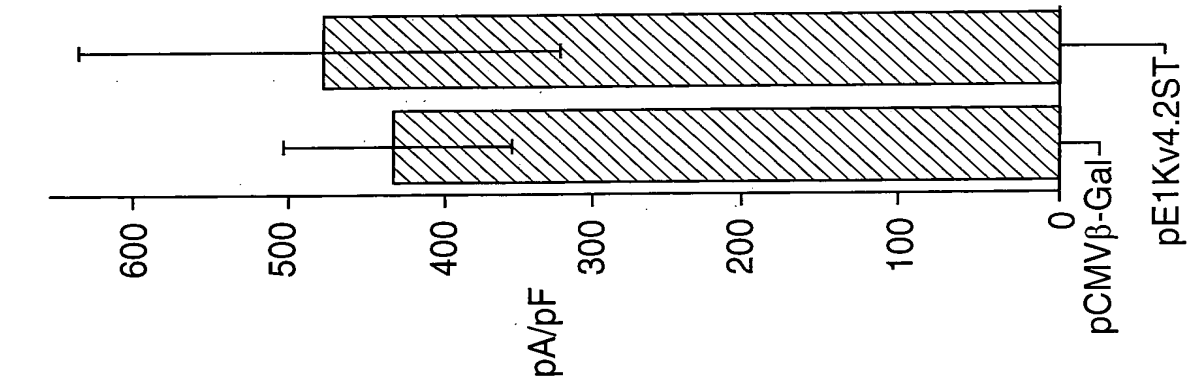


FIG. 9F

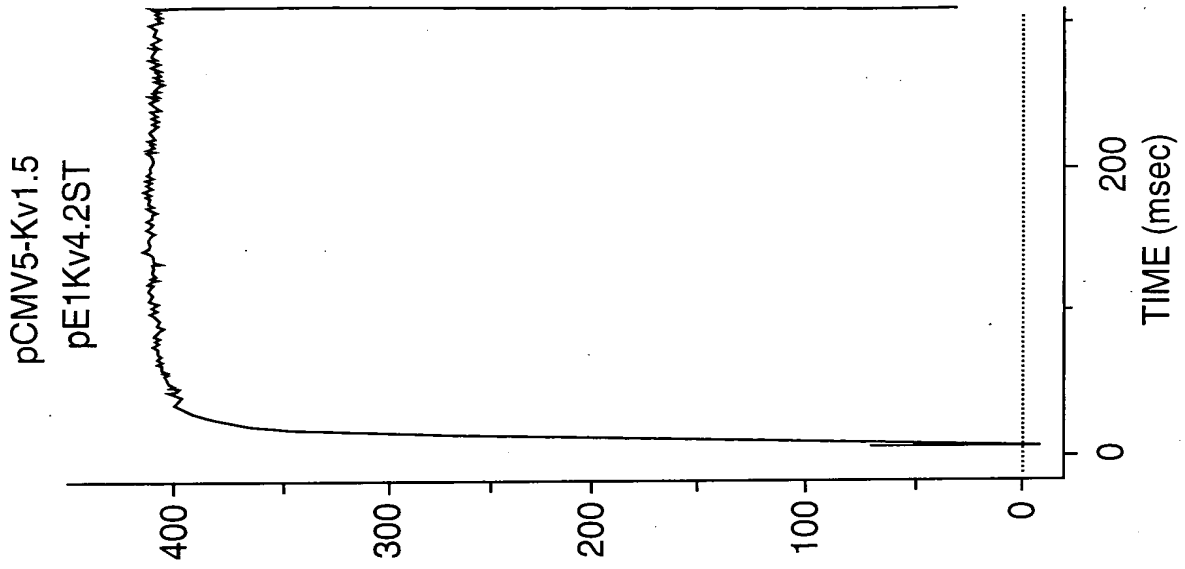


FIG. 9E

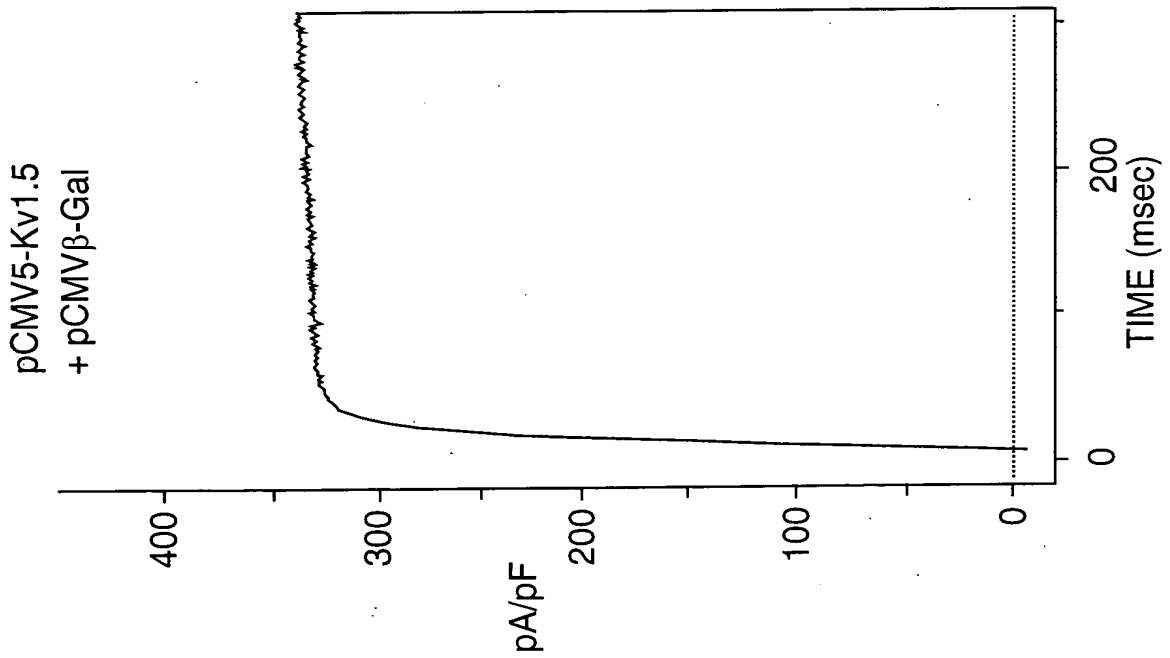
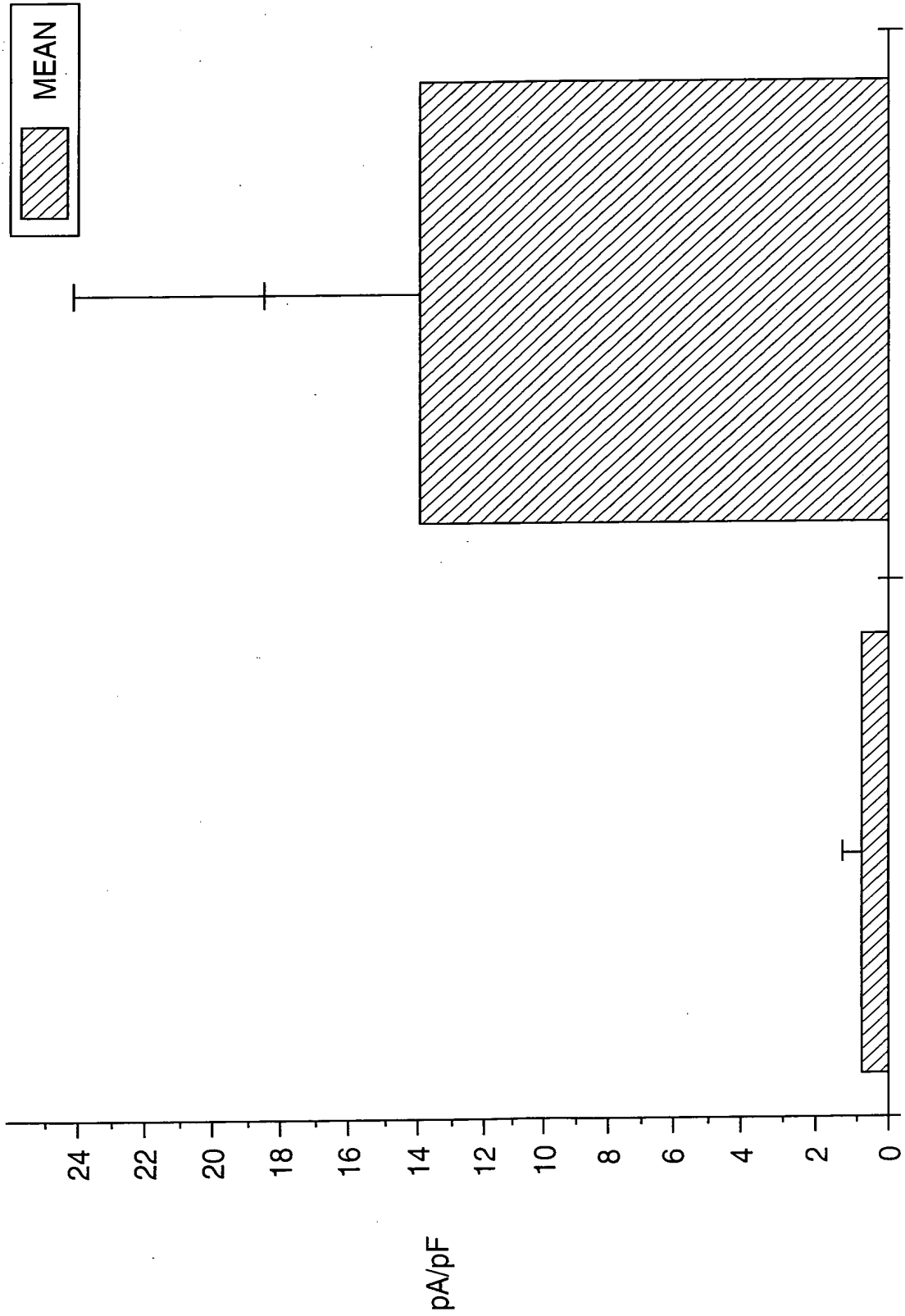


FIG. 9D

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BETA GAL
FIG. 10B

4.2ST
FIG. 10A

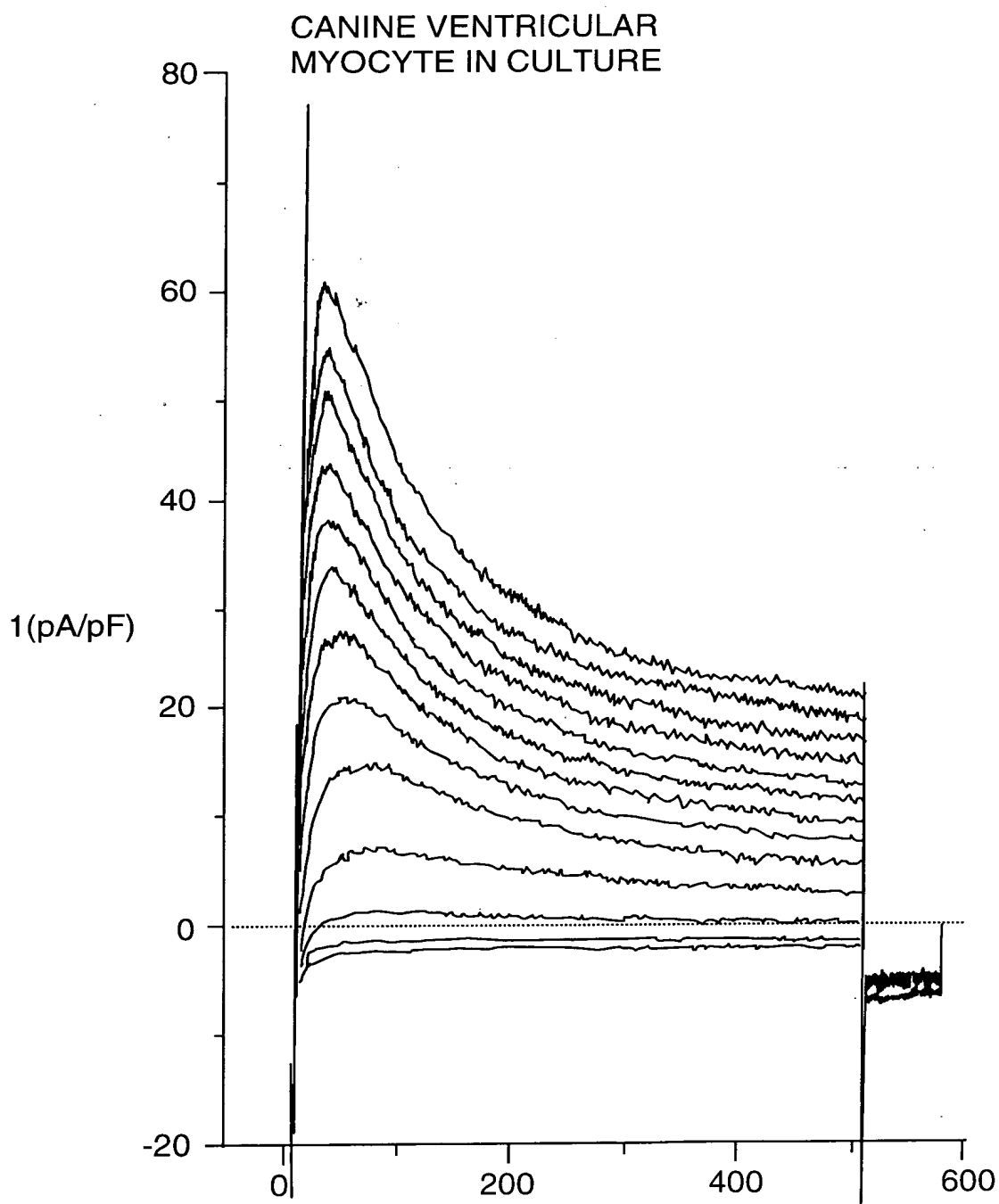


FIG. 11A

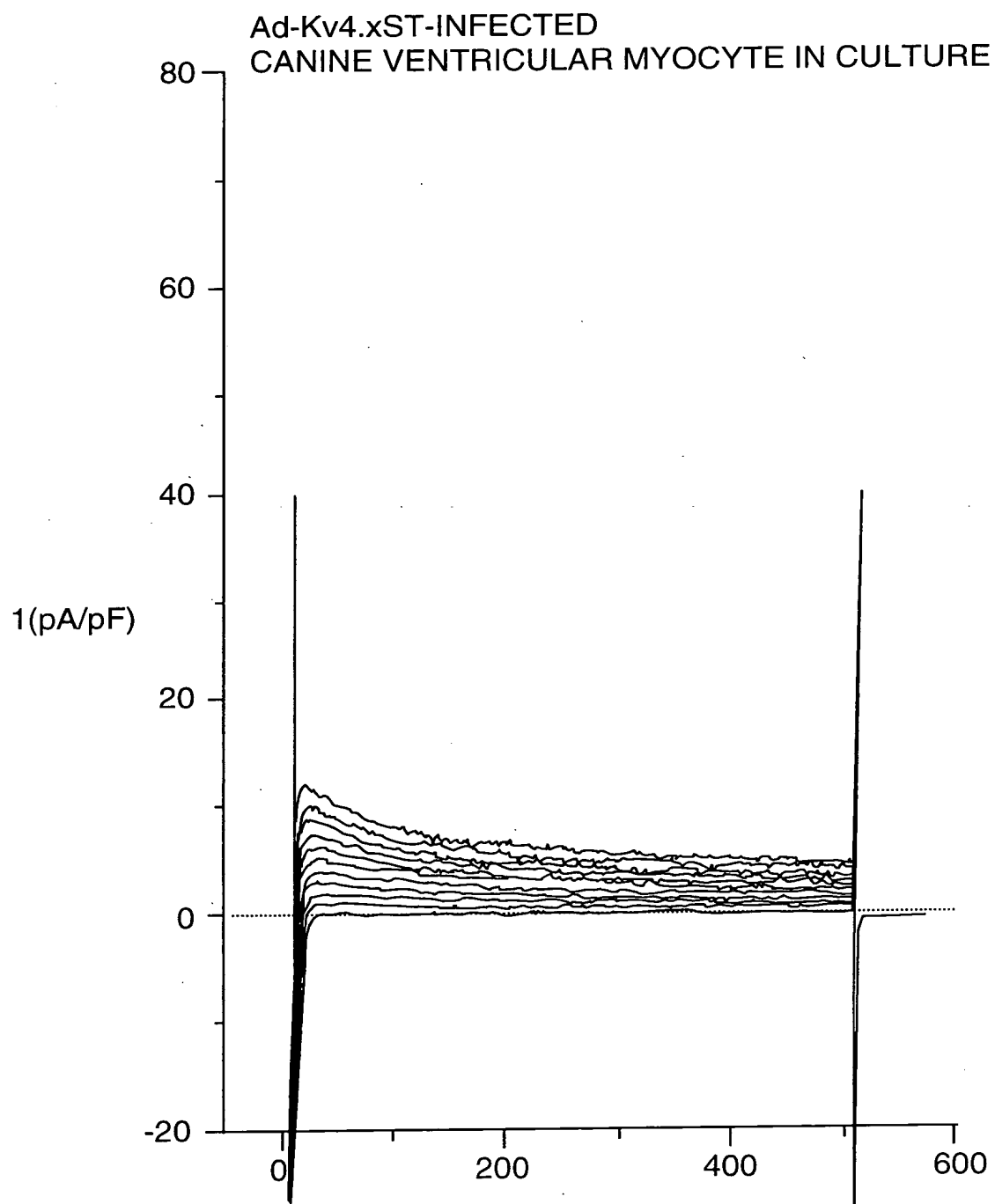


FIG. 11B

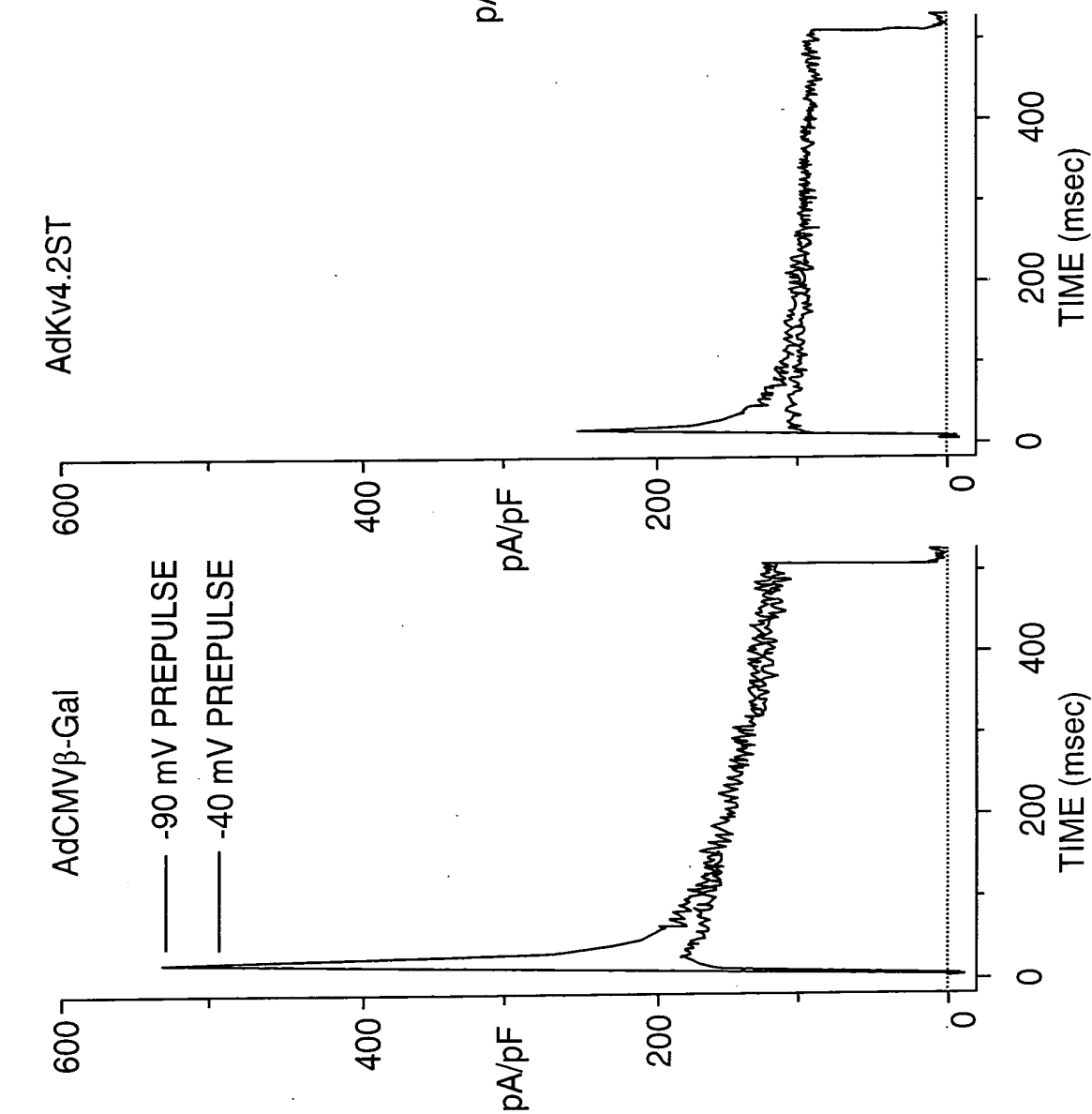


FIG. 12A

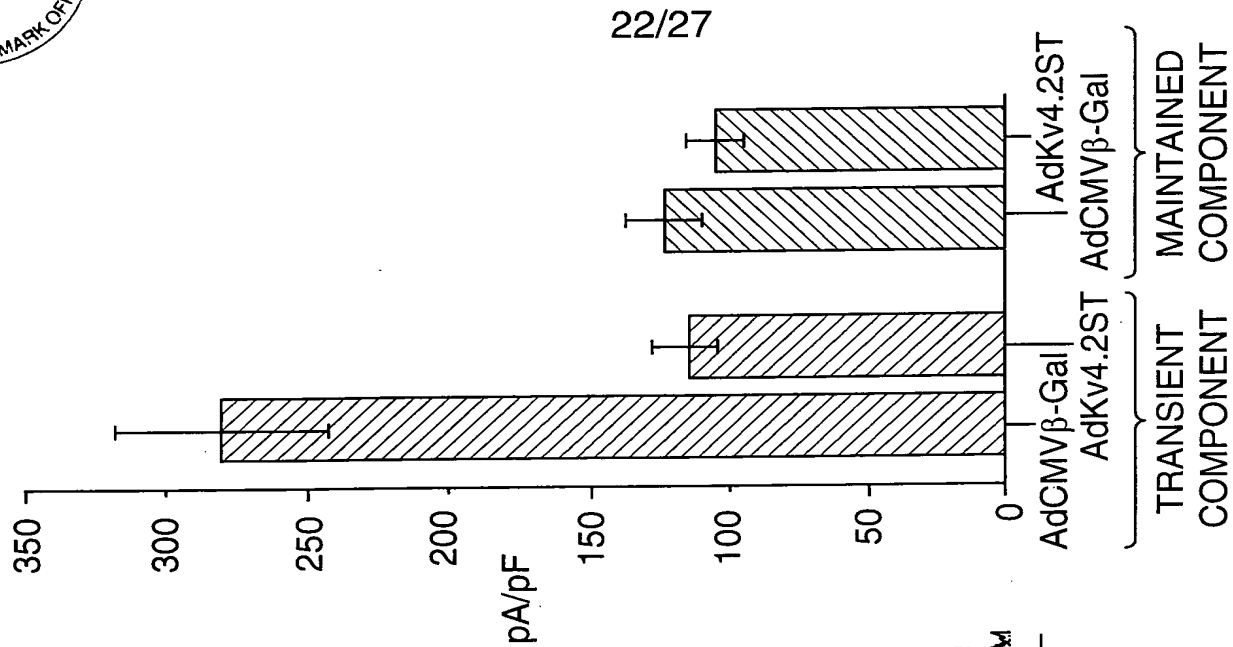


FIG. 12C

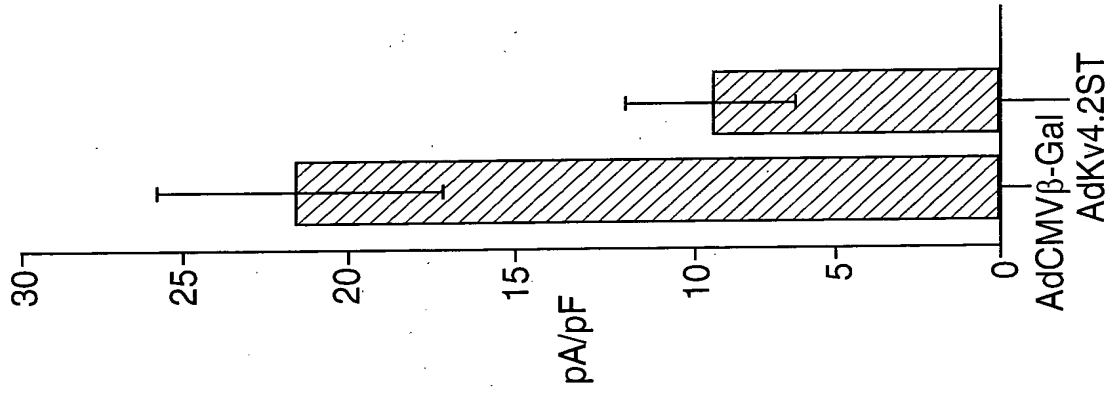


FIG. 13C

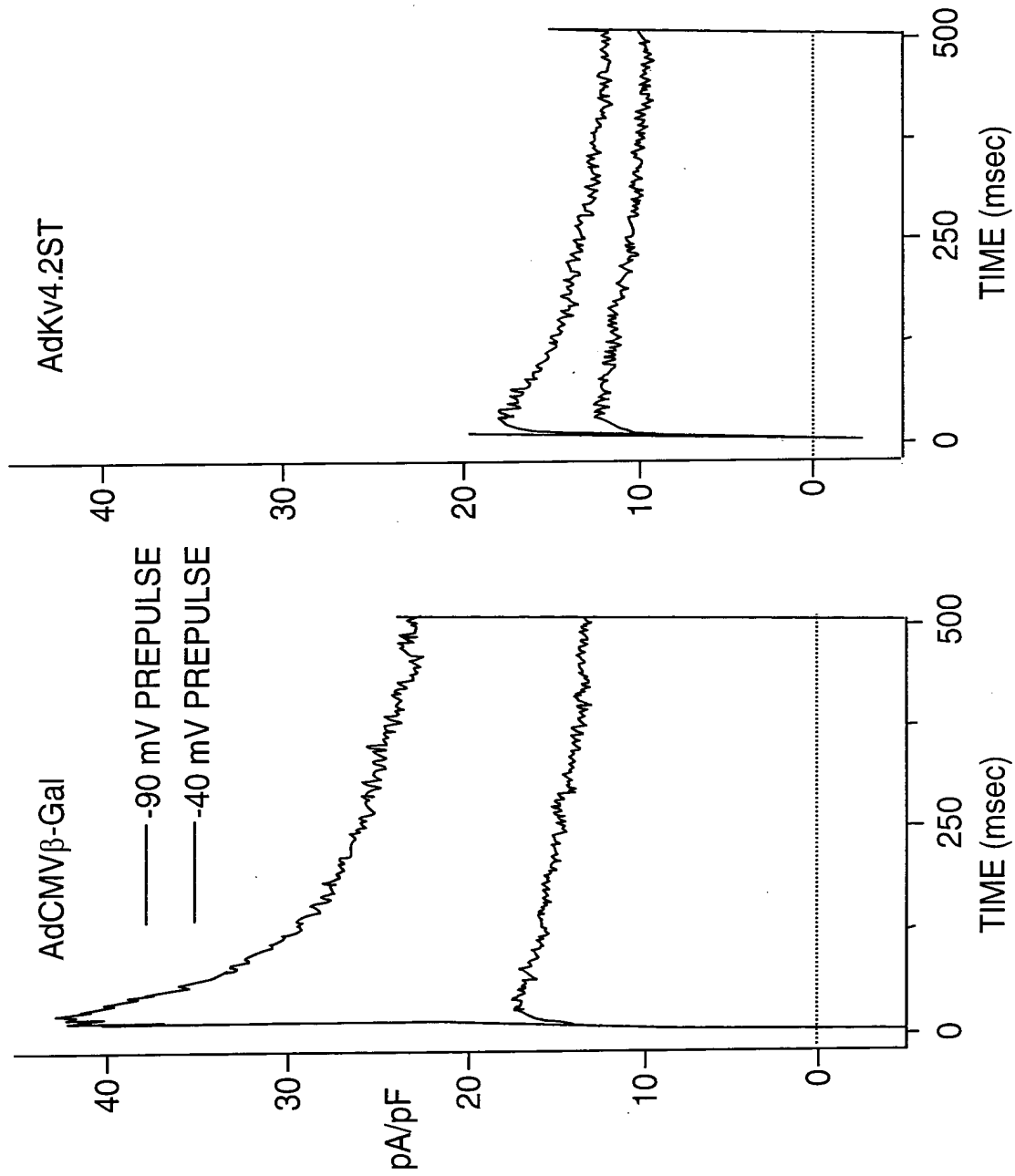


FIG. 13B

FIG. 13A

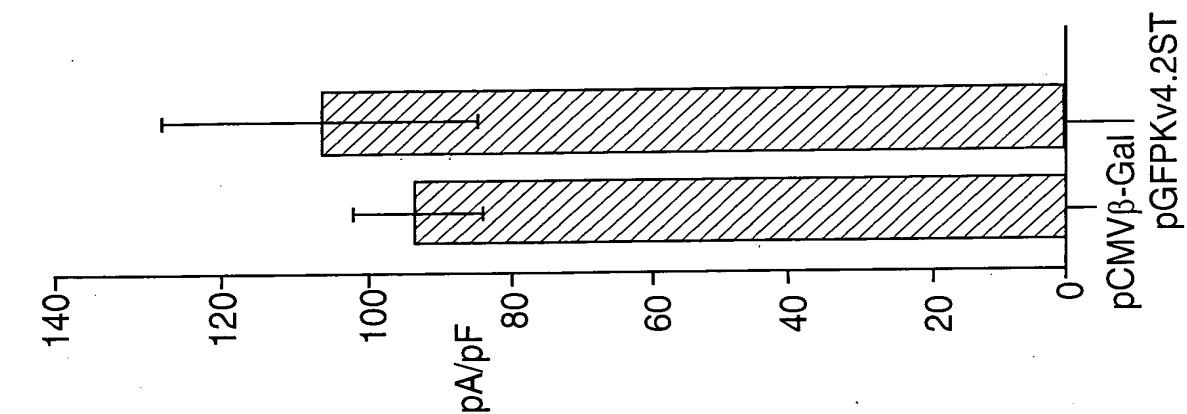


FIG. 14C

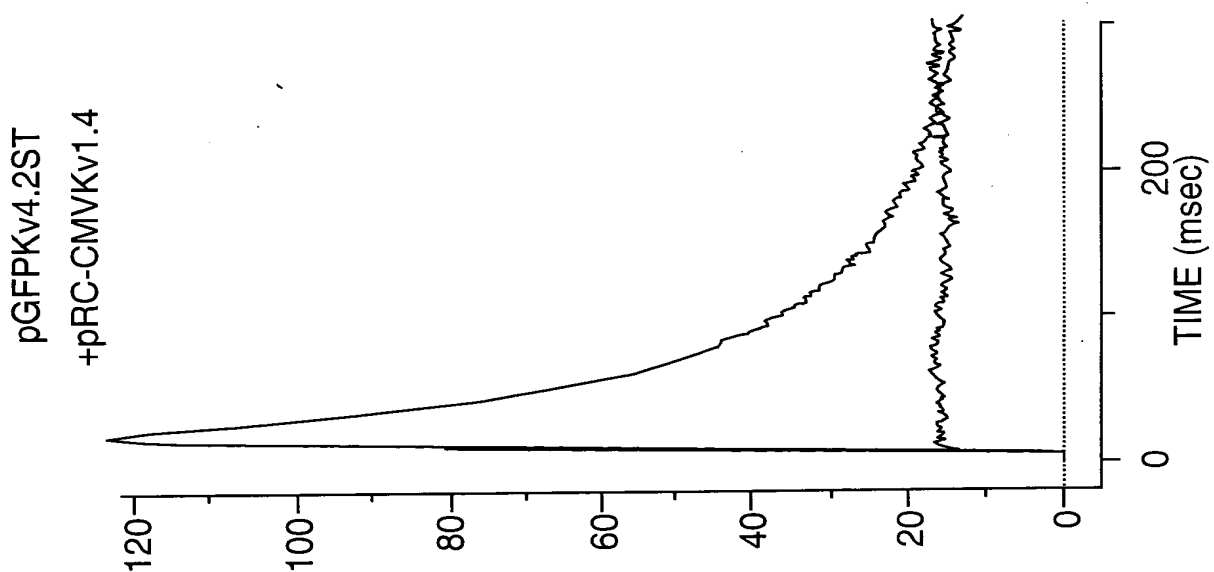


FIG. 14B

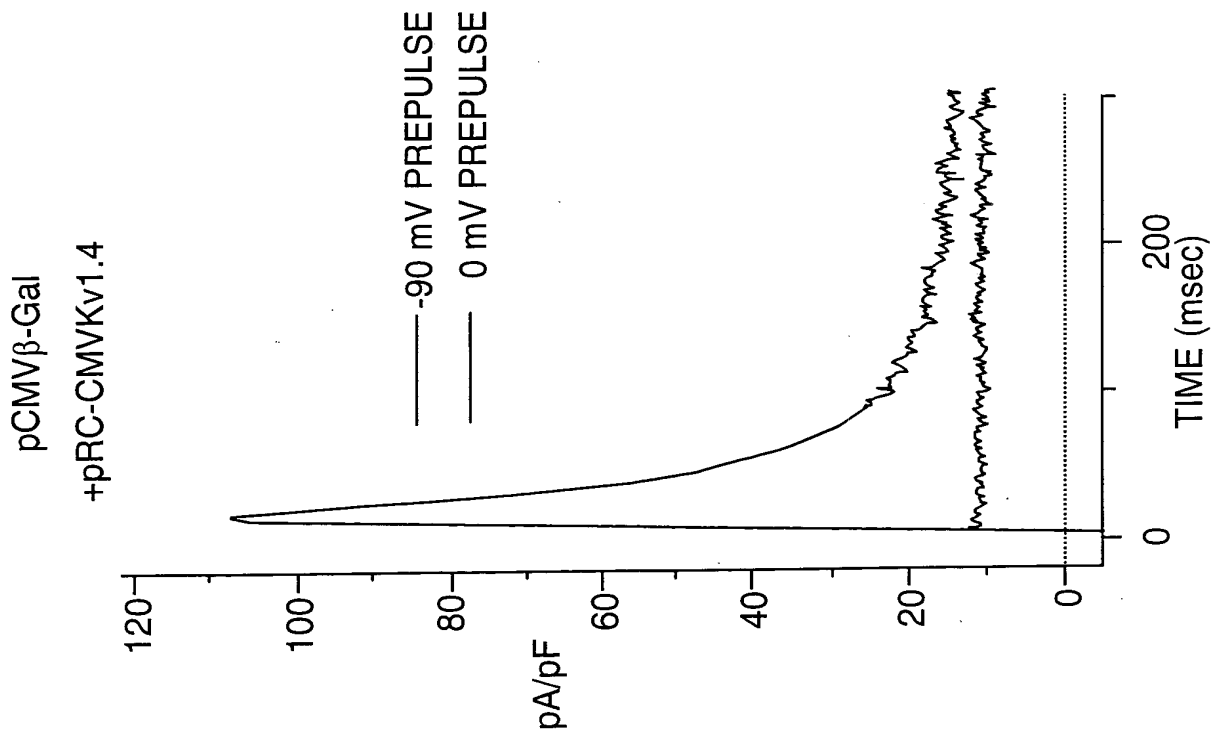


FIG. 14A

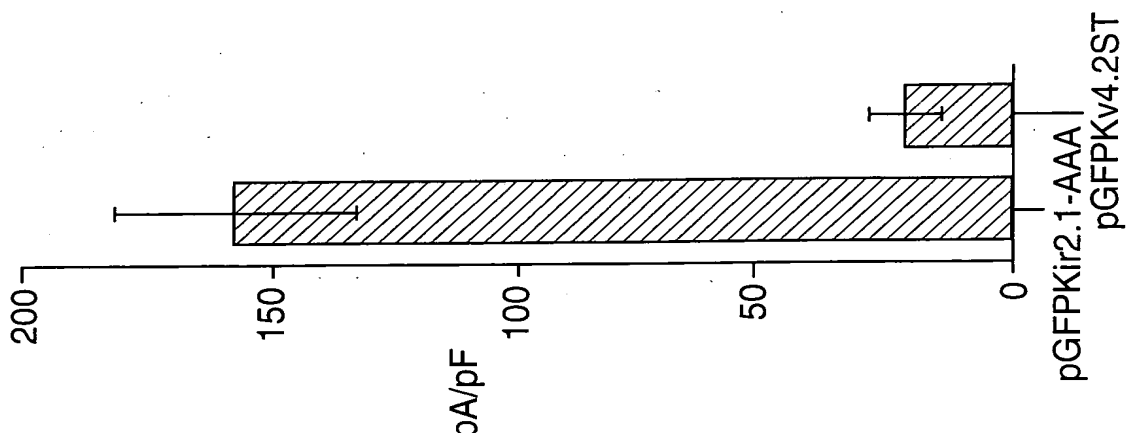


FIG. 14F

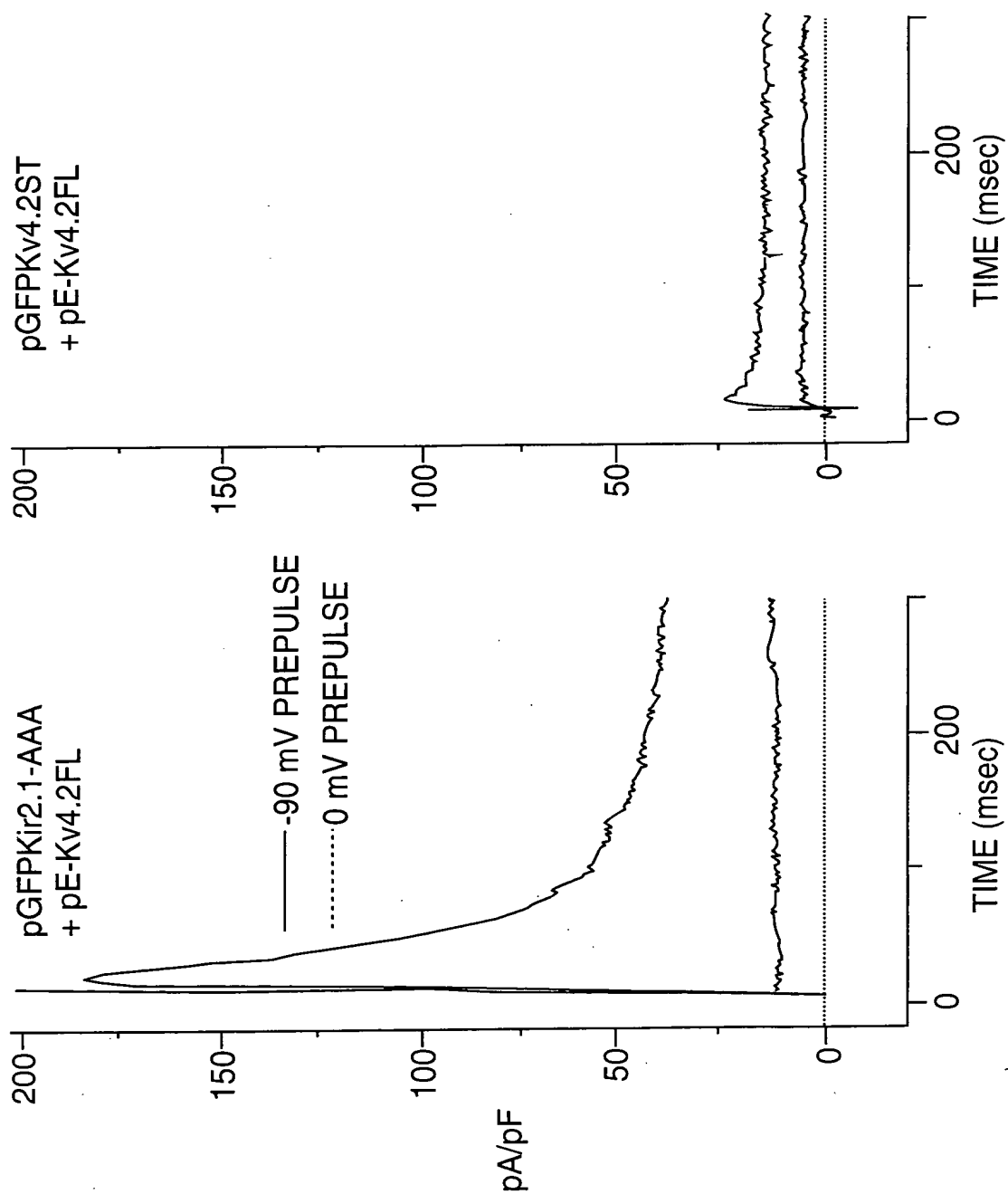


FIG. 14E

FIG. 14D

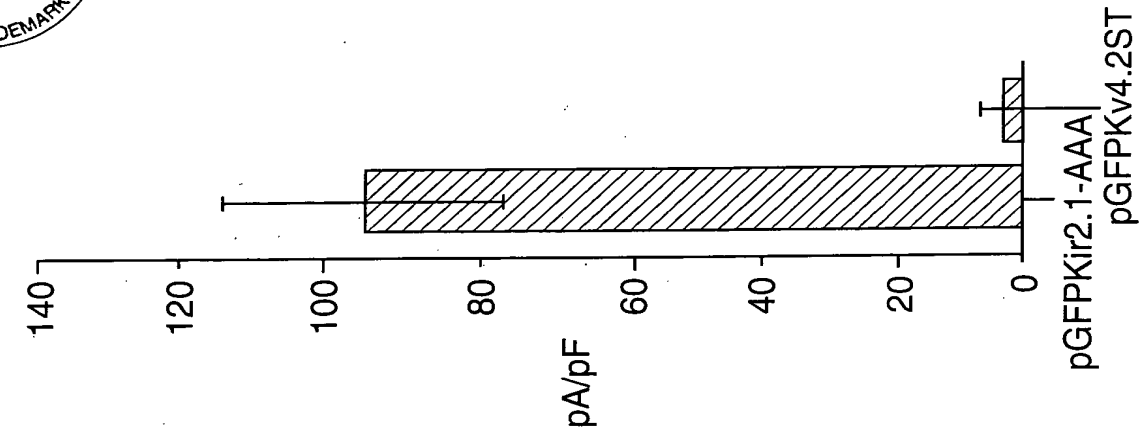


FIG. 14I

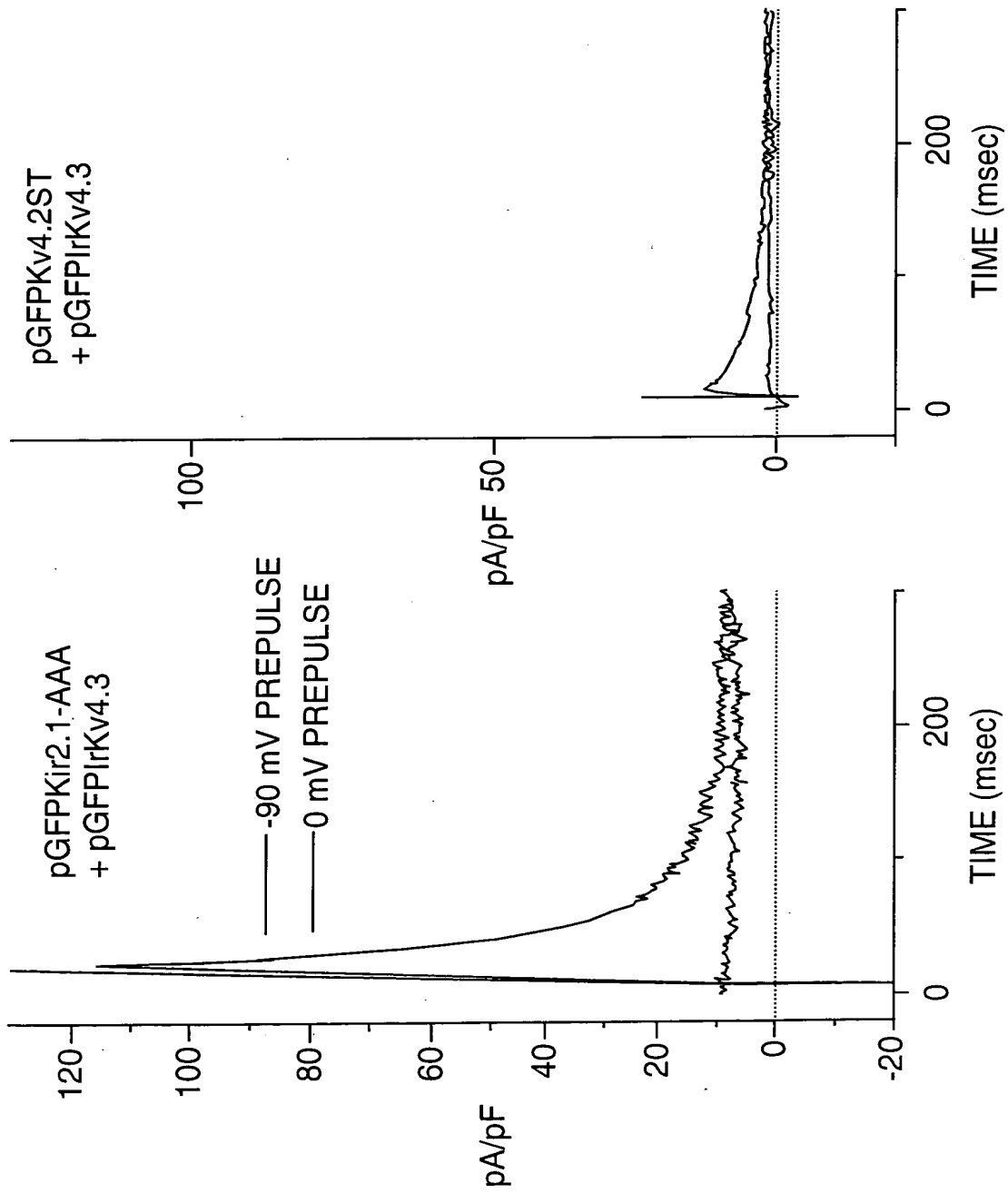


FIG. 14H

FIG. 14G



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FIG. 15B



FIG. 15A

BEST AVAILABLE COPY